ความรู้และพฤติกรรมของพยาบาลและผู้ช่วยพยาบาลระดับตติยภูมิเกี่ยวกับภาวะอวัยวะในอุ้งเชิงกรานหย่อนและภาวะปัสสาวะเล็ดราด

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Abstract: Knowledge and Practice of Nurses and Practical Nurses in the Tertiary Health Care Center Regarding Pelvic Organ Prolapse and Urinary Incontinence

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This study aimed to evaluate the level of knowledge and practice behaviors regarding pelvic organ prolapse (POP) and urinary incontinence (UI) among female nurses and practical nurses, and the association between the level of knowledge and their practice behaviors. This was a cross-sectional study conducted in a tertiary health care center. A Prolapse and Incontinence Knowledge Questionnaire was used to evaluate the level of knowledge, while a newly developed, 3-item questionnaire was used to evaluate practice behaviors. Among 3,083 nurses and practical nurses, 1,832 (59.42%) agreed to participate in the study. Among the 1,756 participants who completed the questionnaire, a total of 14.3% of the participants lacked pelvic organ prolapse proficiency whereas 55.2% lacked proficiency in urinary incontinence. Factors associated with knowledge were education level and age ($p < 0.05$). There was an association between level of knowledge and all 3 items of practice behaviors ($p < 0.01$). The adjusted odds ratios for the POP and UI scale score of ≥ 50% for three behaviors were 1.42-4.02 (95% CI; 1.03-5.1). In conclusion, the level of prolapse-related knowledge was quite high while incontinence-related knowledge was rather low in nurses and practical nurses. Level of knowledge influences their practice behaviors. Therefore, increasing healthcare provider's proficiency regarding pelvic organ prolapse and urinary incontinence is needed.

Keywords: Knowledge, Practice, Pelvic organ prolapse, Urinary incontinence, Nurses

บทคัดย่อ

การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อประเมินความรู้และพฤติกรรมเกี่ยวกับภาวะกระบังลมหย่อนและภาวะปัสสาวะเล็ดราดของพยาบาลและผู้ช่วยพยาบาลที่เป็นเพศหญิง รวมทั้งศึกษาความสัมพันธ์ระหว่างระดับของความรู้และพฤติกรรมดังกล่าว การศึกษาครั้งนี้เป็นการศึกษาภาคตัดขวางในโรงพยาบาลระดับตติยภูมิ โดยใช้แบบสอบถามความรู้และพฤติกรรมเกี่ยวกับภาวะกระบังลมหย่อนและภาวะปัสสาวะเล็ดราดเพื่อประเมินระดับของความรู้ และได้มีการสร้างแบบสอบถามชุดใหม่ซึ่งมีข้อคำถาม 3 ข้อ เพื่อใช้ประเมินพฤติกรรมเกี่ยวกับภาวะกระบังลมหย่อนและปัสสาวะเล็ดราด ในจำนวนพยาบาลและผู้ช่วยพยาบาลจำนวนทั้งสิ้น 3,083 คน มี 1,832 คน (ร้อยละ 59.42%) ที่ตอบแบบสอบถามครบสมบูรณ์ ผลการศึกษาพบว่า ร้อยละ 14.3 ของกลุ่มตัวอย่างพร่องความรู้เกี่ยวกับภาวะกระบังลมหย่อน ขณะที่ร้อยละ 55.2 พร่องความรู้เกี่ยวกับภาวะปัสสาวะเล็ดราด ปัจจัยที่มีผลต่อความรู้ ได้แก่ ระดับการศึกษาและอายุ ($p < 0.05$) นอกจากนี้ยังพบความสัมพันธ์ระหว่างระดับความรู้กับพฤติกรรมทั้งสามข้อ ($p < 0.01$) โดยสรุปแล้ว พยาบาลและผู้ช่วยพยาบาลจะมีระดับความรู้ค่อนข้างสูงเกี่ยวกับภาวะกระบังลมหย่อน ขณะที่จะมีระดับความรู้ค่อนข้างต่ำเกี่ยวกับภาวะปัสสาวะเล็ดราด โดยที่ระดับความรู้จะมีผลต่อพฤติกรรม ดังนั้นการเพิ่มพูนความรู้เกี่ยวกับภาวะกระบังลมหย่อนและภาวะปัสสาวะเล็ดราดให้กับบุคลากรด้านสุขภาพจึงมีความจำเป็น

คำสำคัญ : ความรู้ พฤติกรรม ภาวะกระบังลมหย่อน ภาวะปัสสาวะเล็ดราด พยาบาล

Introduction

Pelvic floor dysfunction (PFD) are the disorders in the gynecologic, lower urinary and lower gastrointestinal tract[1]. It is known that pelvic organ prolapse (POP) and urinary incontinence (UI) are the most common conditions among pelvic floor dysfunction[2-3]. Pelvic organ prolapse is defined as a complaint of a "bulge" or "something coming down" towards or through the vaginal introitus. Urinary incontinence is defined as a complaint of involuntary loss of urine[1]. Previous reports demonstrated that women suffer significant physical and emotional distress from UI and POP, including depression, loss of self-esteem, social isolation and poor sleep quality[4-5]. Moreover, a recent systematic review demonstrated that lower urinary tract symptoms are a significant issue among the female nursing workforce[6].

Health care providers including nurses and practical nurses play a vital role in educating general public about various health issues. In addition, knowledge and attitudes of health care providers are significant factors that could contribute to compliance with the care guidelines[7], their commitment in health care service[8] and their behaviour in providing counselling[9]. Correspondingly, health care provider's competence, knowledge, and practice skills are found to be associated with PFD quality of care[10-12]. Previous studies reported that the level of urinary incontinence-related knowledge and the attitudes of nurses were better than those of nurse assistants in nursing homes[10,13]. There is scarce data regarding pelvic organ prolapse and urinary incontinence knowledge and practice behaviors among nurses and practical nurses or nurse assistants especially in Thailand. Therefore, it is noteworthy to explore the level of knowledge of pelvic organ prolapse and urinary incontinence among the female nursing workforce and whether the degree of such knowledge is associated with their practice behaviors or not.

Objectives

1. To evaluate the level of knowledge and practice behaviors regarding POP and UI among nurses and practical nurses in a tertiary health care center.

2. To evaluate the association between the level of knowledge and their practice behaviors.

Materials and Methods

After the protocol was approved by the institutional review board, a cross-sectional survey using a self-administered questionnaire to assess knowledge and practice behaviors was conducted from January, 2015 to December, 2015. The study population was female health care providers; i.e. nurses and practical nurses in 107 sections of Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand. The nurse or registered nurse (RN) refers to a nurse who has graduated from a school of nursing and has passed a national licensing exam. The practical nurse (PN) was a nurse who cares for people who are sick, injured, convalescent or disabled. PNs work under the direction of registered nurses or physicians. The inclusion criteria were women older than 18 years who had been working for at least one year in the center. The exclusion criteria were that pregnancy, postpartum period and women who were not willing to complete the questionnaire. All participants gave written informed consent before entering the study.

Questionnaire

The validated, Thai-version, Prolapse and Incontinence Knowledge Questionnaire (PIKQ) was used to assess participants' knowledge. The questionnaire was composed of 12 questions focused on POP knowledge (POP scale) and 12 questions focused on UI (UI scale). Basically, questions are related to etiology, contributing factors, symptoms and treatment of both conditions. Each question had 3 possible responses: yes, no, and I do not know. One point was given for each correct response, and no points were given for an incorrect response, a blank response, or for the response of "I don't know". For each scale, the minimum possible total score is 0, the maximum possible score is 12, and the range of scores is 0 to 12[14]. Two independent native Thai speakers, who are fluent in English, translated and developed two Thai versions of PIKQ. After the most appropriate wording had been selected in the common Thai version, it was piloted by 10 volunteers to ensure that the wording was simple for the reader to understand. Re-testing on another 10 volunteers with the test–retest intra-class correlation coefficient of 0.80 and fine adjustments based on their feedback were done, while maintaining the meaning and content of the original items. As a result, the final Thai version PIKQ questionnaire was produced and ready to use for this study.

The newly developed, validated 3-item questionnaire was used to evaluate personal practice behaviors; performing regular pelvic floor muscle exercises, heavy lifting avoidance, informing or helping their patients to seek health care. They were closed questions with two possible responses: yes and no. The questionnaire was validated by two experts and tested on 10 volunteers who were not involved in the present study with the test–retest intra-class correlation coefficient of 0.88.

Questionnaire

Primary outcome was the rate of proficiency on the POP and UI scales, respectively. Proficiency was defined as scores of 50% or greater on the POP scale and 80% or greater on the UI scale. These levels were proved to precisely indicate higher-than-usual knowledge in a previous study[15]. The secondary outcome was the association between the level of knowledge and PFD-related personal practice behaviors.

Statistical analysis

The data analysis was performed using SPSS. Descriptive statistics were used for demographic data, knowledge and practice behavior. Differences in the rates of proficiency on the POP and UI scales by level of education, age were determined using chi-square test or Fisher's exact test. Pearson Chi-Square and t-test were carried out to study the association between all 3 items of practice behaviors and POP and UI proficiency and mean scores, respectively. Multivariate analysis with odds ratios was used to investigate the different levels of POP and UI scales on all practice behaviors. A P value < 0.05 was considered statistically significant.

Results

We approached 3,083 nurses and practical nurses of which 1,832 (59.42%) agreed to participate in the study. Among the 1,756 participants who completed the PIKQ, 964 (54.4%) were nurses and 792 (45.1%) were practical nurses. The mean age was 31.05 ± 8.99 years; range 18-60 years. The mean age of nurses and practical nurses were 30.28 ± 8.45 years and 31.99 ± 9.43 years, respectively (P > 0.05). In total 14.3% of participants lacked POP proficiency whereas 55.2% lacked proficiency in UI knowledge. The average scale score for POP knowledge among all participants was 7.77 ± 2.21 (95% CI, 7.67-7.88). For UI knowledge, the average scale score was 8.68 ± 2.53 (95% CI, 8.56-8.80).

For the POP scale that is shown in Table 1, questions 1, 2 and 8 (concerning the etiology of POP) were the items most likely to be answered correctly. Whereas, questions 7 and 11 which pertained to the treatment of POP, the participants correctly scored only 25.7% and 35.2%, respectively. A greater percentage of nurses than practical nurses scored correctly for all questions except questions 6 and 7.

Table 1 Number and percentage of participants within each educational level group scoring correctly for each item on the pelvic organ prolapse scale

Item number	Total (N = 1,756)	Nurses (N = 964)	Practical nurses (N = 792)	P value
1. Pelvic organ prolapse (bulging of the vagina, uterus, bladder, or rectum) is more common in young women than in old women.	1,491 (84.9%)	880 (91.3%)	611 (77.1%)	< 0.001
2. Giving birth many times may lead to pelvic organ prolapse.	1,542 (87.8%)	896 (92.9%)	646 (81.6%)	< 0.001
3. Pelvic organ prolapse can happen at any age.	702 (40.0%)	432 (44.8%)	646 (34.1%)	< 0.001
4. Certain exercises can help to stop pelvic organ prolapse from getting worse.	1,485 (84.6%)	868 (90.0%)	617 (77.9%)	< 0.001
5. Symptoms of pelvic organ prolapse may include pelvic heaviness and/or pressure.	1,103 (62.8%)	634 (65.8%)	469 (59.2%)	0.005
6. A good way for a doctor to diagnose pelvic organ prolapse is by examining the patient.	1,368 (77.9%)	717 (74.4%)	651 (82.2%)	< 0.001
7. Once a patient has pelvic organ prolapse, not much can be done to help her.	618 (35.2%)	339 (35.2%)	279 (35.2%)	0.979
8. Heavy lifting on a daily basis can lead to pelvic organ prolapse.	1,440 (82.0%)	808 (83.8%)	632 (79.8%)	0.029
9. Surgery is one type of treatment for pelvic organ prolapse.	1,200 (68.3%)	763 (79.1%)	437 (55.2%)	< 0.001
10. Doctors can run a blood test to diagnose pelvic organ prolapse.	1,219 (69.4%)	740 (76.8%)	479 (60.5%)	< 0.001
11. A rubber ring called a pessary can be used to treat symptoms of pelvic organ prolapse.	452 (25.7%)	262 (27.2%)	190 (24.0%)	0.128
12. People who are obese are less likely to get pelvic organ prolapse.	1,037 (59.1%)	612 (63.5%)	425 (53.7%)	< 0.001

Chi-square test

For the UI scale that is shown in Table 2, question 7 (concerning the effect of some medications on urinary leakage) was least likely to be answered correctly. However, registered nurses were more likely to score higher than practical nurses (p < 0.05). Question 9, which concerns the special investigation for UI, was answered correctly by 59.3% and 57.7% of nurses and practical nurses, respectively and the difference was not statistically significant (p > 0.05).

Table 2 Number and percentage of participants within each educational level group scoring correctly for each item on the urinary incontinence scale

Item number	Total (N = 1,756)	Nurses (N = 964)	Practical nurses (N = 792)	P value
1. Urinary incontinence (loss of urine or leaky bladder) is more common in young women than in old women.	1,576 (89.7%)	899 (93.3%)	677 (85.5%)	< 0.001
2. Women are more likely than men to leak urine.	1,417 (80.7%)	808 (83.8%)	609 (76.9%)	< 0.001
3. Other than pads and diapers, not much can be done to treat leakage of urine.	1,317 (75.0%)	804 (83.4%)	513 (64.8%)	< 0.001
4. It is NOT important to diagnose the type of urine leakage before trying to treat it.	1,407 (80.1%)	838 (86.9%)	569 (71.8%)	< 0.001
5. Many things can cause urine leakage.	1,613 (91.9%)	918 (95.2%)	695 (87.8%)	< 0.001
6. Certain exercises can be done to help to control urine leakage.	1,357 (77.3%)	823 (85.4%)	534 (67.4%)	< 0.001
7. Some medications may cause urinary leakage.	919 (52.3%)	590 (61.2%)	329 (41.5%)	< 0.001
8. Once people start to leak urine, they are never able to control their urine again.	1,292 (73.6%)	803 (83.3%)	489 (61.7%)	< 0.001
9. Doctors can do special types of bladder testing to diagnose urine leakage.	1,029 (58.6%)	572 (59.3%)	457 (57.7%)	0.489
10. Surgery is the only treatment for urinary leakage.	1,131 (64.4%)	720 (74.7%)	411 (51.9%)	< 0.001
11. Giving birth many times may lead to urine leakage.	1,079 (61.4%)	661 (68.6%)	418 (52.8%)	< 0.001
12. Most people who leak urine can be cured or improved with some kind of treatment.	1,115 (63.5%)	584 (60.6%)	531 (67.0%)	< 0.001

Chi-square test

Factors associated with POP and UI knowledge were level of education and age. Nurses showed a higher number of correct responses on the POP and UI scales than practical nurses ($p < 0.05$). In addition, participants aged between 41 and 60 were more proficient in POP-related and UI-related knowledge than those who were younger ($p < 0.05$). (Table 3) Logistic regression analysis was performed to evaluate the effect of education level and age on the chance of POP and UI proficiency after controlling the other. For the POP scale, education level and age remained statistically significant ($p < 0.001$ and $p = 0.003$) with likelihood ratios of 60.873 and 13.091, respectively. For the UI scale, the level of education and age were also statistically significant ($p < 0.001$ and $p = 0.023$) with likelihood ratios of 111.200 and 7.461, respectively.

Table 3 Association between POP and UI knowledge and educational level and age group

Factors	POP Knowledge		P value	UI Knowledge		P value
	> 50% N (%)	< 50% N (%)		> 80% N (%)	< 80% N (%)	
Educational level						
- Nurses	883 (91.6%)	81 (8.4%)	<0.001	540 (56.0%)	424 (44.0%)	<0.001
- Practical nurses	622 (78.5%)	170 (21.5%)		246 (31.1%)	546 (68.9%)	
Age group (years)						
- <31	901 (85.0%)	159 (15.0%)	0.003	458 (43.2%)	602 (56.8%)	0.023
- 31-40	364 (83.5%)	72 (16.5%)		191 (43.8%)	245 (56.2%)	
- 41-60	241 (92.3%)	20 (7.7%)		137 (52.5%)	124 (47.5%)	

Chi-square test or Fisher's exact test

With regard to personal practice behaviors, 56.25% of participants did pelvic floor muscle exercise regularly, 73.71% tried to avoid heavy lifting and 61.4% informed their patients to seek proper care for PFDs. There was an association between POP and UI proficiency and all 3 items of practice behaviors ($p < 0.01$). Participants who got scores of 50% or greater on the POP scale and 80% or greater on the UI scale managed to do regular pelvic floor muscle exercise and avoid heavy lifting in daily life. Moreover, they tended to tell their patients, who suffered from PFDs symptoms, to seek medical attention (Table 4).

Table 4 Association between POP and UI proficiency and practice behaviors

Scale	Behavior 1			Behavior 2			Behavior 3		
	Yes N (%)	No N (%)	P value	Yes N (%)	No N (%)	P value	Yes N (%)	No N (%)	P value
POP scale									
< 50 %	108 (43.0%)	143 (57.0%)	< 0.001	149 (59.4%)	102 (40.6%)	< 0.001	91 (36.3%)	160 (63.7%)	< 0.001
≥ 50 %	878 (58.3%)	627 (41.7%)		1145 (76.1%)	360 (23.9%)		988 (95.6%)	517 (34.4%)	
UI scale									
< 80 %	505 (52.1%)	465 (47.9%)	<0.001	667 (68.8%)	303 (31.2%)	< 0.001	503 (51.9%)	467 (48.1%)	< 0.001
≥ 80 %	481 (61.2%)	305 (38.8%)		627 (79.8%)	159 (20.2%)		576 (73.3%)	210 (26.7%)	

Chi-square test or Fisher's exact test

Behavior 1; performing regular pelvic floor muscle exercises

Behavior 2; heavy lifting avoidance

Behavior 3; informing or helping their patients to seek health care

Additionally, the association between POP and UI scale scores with all three practice behaviors was also demonstrated in Table 5. The means of POP scale score in participants who informed their patients to seek proper care and did not were 6.99 + 2.34 and 8.27 + 2.42, respectively ($p < 0.001$). Likewise, the means UI scale score in participants who performed and did not perform such behavior were 9.24 + 2.08 and 7.79 + 2.91, respectively ($p < 0.001$).

Table 5 Adjusted odds ratio and 95% confidence interval of POP and UI scale scores and practice behaviors

Scores	Behavior 1		P value	Behavior 2		P value	Behavior 3		P value
	Yes Mean + SD	No Mean + SD		Yes Mean + SD	No Mean + SD		Yes Mean + SD	No Mean + SD	
POP	7.99 + 2.02	7.51 + 2.42	<0.001	8.00 + 2.07	7.14 + 2.48	<0.001	8.27 + 1.98	6.70 + 2.34	<0.001
UI	9.24 + 2.08	7.80 + 2.91	<0.001	9.00 + 2.21	7.80 + 3.12	<0.001	9.24 + 2.08	7.79 + 2.91	<0.001

Student t-test

Behavior 1; performing regular pelvic floor muscle exercises

Behavior 2; heavy lifting avoidance

Behavior 3; informing or helping their patients to seek health care

Multivariate analysis shows statistically significant association of both POP and UI scale scores and increased practice behaviors (Table 6). The POP scale scores of ≥ 50% significantly increased prevalence of all three practice behaviors with odds ratios of 1.58, 1.42 and 1.90, respectively ($p < 0.05$). The UI scale scores of ≥ 50% significantly increased prevalence of all three practice behaviors with odds ratios of 1.89, 2.04 and 2.26, respectively ($p < 0.001$). Participants with the POP and UI scale scores of ≥ 80% demonstrated odds ratios of 3.45 (95% CI; 2.33-5.10 and 4.02 (95% CI; 2.74-5.91), respectively, in helping their patients to seek health care ($p < 0.001$).

Table 6 Multivariate analysis model for the POP and UI scale scores and practice behaviors

Score	Behavior 1			Behavior 2			Behavior 3		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
POP									
< 50	1			1			1		
50-79	1.58	1.16-2.16	<0.001	1.42	1.03-1.95	0.032	1.90	1.39-2.60	<0.001
≥ 80	1.56	1.08-2.26	<0.001	1.73	1.16-2.59	0.008	3.45	2.33-5.10	<0.001
UI									
< 50	1			1			1		
50-79	1.89	1.33-2.69	<0.001	2.04	1.43-2.89	<0.001	2.26	1.57-3.26	<0.001
≥ 80	2.68	1.83-3.91	<0.001	2.78	1.90-4.06	<0.001	4.02	2.74-5.91	<0.001

OR; Odds Ratio
95% CI; 95% Confidence Interval
Behavior 1; performing regular pelvic floor muscle exercises
Behavior 2; heavy lifting avoidance
Behavior 3; informing or helping their patients to seek health care

Discussion

The present study demonstrated that the nurses and practical nurses working in the tertiary health care center have reasonable knowledge about POP and UI. However, the proficiency of POP knowledge seemed to be higher than UI knowledge. Furthermore, participants who were older were found to correlat with the upper level of knowledge and also those with a higher level of education. These results are consistent with the previous study among Korean healthcare providers in long-term care hospitals[11] Remarkably, the level of knowledge related to POP and UI directly affected personal practice behaviors of both nurses and practical nurses. This study confirmed the previous studies that nurses and practical nurses have insufficient knowledge of POP and UI and the level of knowledge is shown to influence their personal health-related behaviors and the quality of PFD care[10-11,16-17].

Pelvic floor dysfunction is common, especially pelvic organ prolapse and urinary incontinence, and considerably negatively affects the quality of life for many women all over the world. Several studies among different groups of women regarding knowledge, attitudes, behaviors and barriers to seeking care concluded that there is a global lack of knowledge about POP and UI[18-22]. The level of knowledge and confidence in providing urogynecologic care may differ among health care providers (10). Additionally, knowledge related to PFD tends to increase with age, income and education[18,20,22] and the greatest barriers to the seeking of care are related to cost and inconvenience[18]. Addressing these findings may be helpful to develop community-based educational tools to ensure that women are familiarized with PFD and to reduce barriers with the ultimate goal of improving health-seeking behavior and their quality of life. On the other hand, the findings from the present study highlight the importance of PFD related knowledge of health care providers. The PFD quality of care is influenced by healthcare provider's competence, knowledge and practice skills[10-11]. Furthermore, improved knowledge, attitudes and confidence of health care providers are perceived as important factors for better care[16]. Therefore, a staff-training program to improve proficiency in POP and UI should be developed in primary, secondary and tertiary care centers, not only to improve the quality of care but also to promote awareness among staff regarding PFD and their health aware behaviors. Knowledgeable female healthcare providers may consider initiating or maintaining regular pelvic floor muscle exercises and try to avoid heavy lifting in their daily lives. Moreover, nurses and practical nurses may be more confident to counsel or recommend to women with symptoms of pelvic organ prolapse or urinary incontinence that they seek proper care.

The present study is one of the few studies specifically addressing knowledge and personal practice behaviors of female healthcare providers in both gynecologic and non-gynecologic practices. The use of the validated questionnaire, Prolapse and Incontinence Knowledge Questionnaire (PIKQ) in this study was beneficial to capture the PFDs proficiency and define the associated factors. Thus, educational programs relating to POP and UI could be appropriately developed and targeted toward the specific groups of healthcare providers who are least proficient. In addition, the present study found the inadequate knowledge regarding POP and UI in both groups. It might indicate that this particular subject area was not adequately address in their curriculum or training. Although this reliable and valid questionnaire was developed for assessing patient knowledge about POP and UI[14], the present study confirms its capability to evaluate healthcare provider knowledge related to these conditions.

Interestingly, knowledge related to POP and UI conditions increased with age. Nurses and practical nurses who were younger than 40 years of age tended to be less proficient in POP and UI knowledge than the group who were older. This finding may be explained by a lower prevalence of these conditions in their age group and the belief that POP and UI are a normal phenomenon of aging. However, further studies regarding the prevalence of symptoms related to pelvic floor disorders among female health care providers, and qualitative studies or structured interviews which provide qualitative evidence of their attitudes contribute to PFD are needed.

Among all three practice behaviors studied, regular pelvic floor muscle exercises were least likely to be performed in this current survey. Though 84.6% and 77.3% of participants knew that certain exercises can help to stop pelvic organ prolapse from getting worse (question 4, POP scale) and can be done to help to control urine leakage (question 6, UI scale), respectively, only 56.25% perform regular pelvic floor muscle exercises. Further studies exploring their understanding, attitudes and barriers to such exercises are warranted.

There were several limitations of this study. The majority of participants are younger than 40 years old and year of work experience was not studied; the findings may not be applied to other population. The questionnaire response rate was not high. In addition, the prevalence of the pelvic organ prolapse or urinary incontinence, and the relationship between POP and UI symptoms and the level of knowledge regarding these conditions were not explored. Despite these limitations the present study endorses the previous studies that enhance a health care provider's

competence regarding pelvic floor dysfunction are clearly needed[11]. This would be a sensible strategy in women's health with the rapidly growing aged population since it could also help to improve the quality of life of women and reduce the increasing financial burdens as a result of pelvic floor dysfunction.

Conclusion

The level of prolapse-related knowledge was quite high while UI-related knowledge was rather low in nurses and practical nurses working at a tertiary care center. Generally, POP and UI knowledge influence the personal practice behaviors of female healthcare providers.

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